is deposited.

The plasma treatment mentioned above is preferably performed at a current of 10 mA to 15 mA for 5 minutes to 7 minutes as a treatment time, and is more preferably performed at a current of 10 mA to 12 mA for 5 minutes. When the treatment time is less than 5 minutes, in particular, the transmittance of the wavelength in the range of 400 to 550 nm is decreased by up to 3 to 5% compared to that in the case in which the treatment time is more than 5 minutes. In contrast, from 5 minutes to 10 minutes for the treatment, an increase in transmittance in the region of the wavelength mentioned above is not observed. For example, when an oxygen plasma treatment is performed, it is preferable that VPS020 manufactured by Sanyu Electron Co., Ltd. be used and that the treatment be performed after purging is performed 2 to 3 times by using oxygen.

In addition, when the current is less than 10 mA, the uniformity of surface treatment may be degraded in some cases, and when the current is more than 15 mA, a decrease in film thickness may occur by ashing in some cases. In addition, a decrease in transmittance of the wavelength in the range of 600 to 800 nm is observed by the treatment described above in accordance with the treatment time. Compared to the case in which the treatment is not performed, when the treatment is performed for 10 minutes, a decrease in transmittance by up to approximately 2% is observed. The reason for this is believed that a change in band structure is caused by oxidation of the surface of the transparent electrode and by the generation of defects therein due to the treatment described above. Accordingly, an oxygen plasma treatment or an air

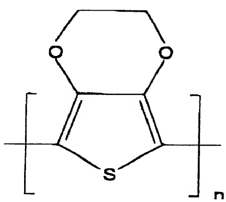
plasma treatment is preferably performed approximately at 10 mA for 5 minutes, and as a result, an increase in transmittance in the vicinity of 500 nm, to which humans are more sensitive, and an increase in transmittance on average in the visible light region can be realized.

In this connection, when the transparent electrode material described above is used for the anode 2, light can be emitted to the outside via at least the substrate 1.

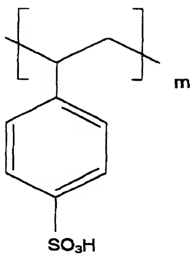
In addition, as the anode 2, for example, a layer composed of a metal, such as Pt, Ir, Ni, Pd, or Au, or a stacked structure of a transparent material layer composed of ITO or the like and a reflective layer composed of Al or the like may be used.

Furthermore, the substrate provided with the anode 2 formed thereon is preferably an active matrix substrate having a plurality of anodes disposed thereon and switching devices, such as thin-film transistors, each provided for each anode.

In this embodiment, between an electrode 2 and the light-emitting layer 4, the hole injection/transport layer 3 is provided. In this connection, the hole injection/transport layer is a layer having a function of hole injection or hole transfer from the anode to the light-emitting layer side. For the hole injection/transport layer 3 described above, a mixture of polyethylenedioxy-thiophene



and polystyrene sulfonate,



copper phthalocyanine, or the like is preferably used.

For the light-emitting layer 4, a low molecular weight organic light-emitting material or a polymeric light-emitting material may be used, a fluorene-based polymer is preferably used, and in particular,